REMARKS

Summary of Claim Status

Claims 1-27 are pending in the present application.

Claims 1-20 are rejected for the reasons discussed below.

Claims 21-27 are allowed. Applicant thanks the Examiner for this acknowledgement of patentable subject matter.

Applicant respectfully requests the favorable reconsideration of the claims and withdrawal of the pending rejections in light of the following remarks.

Rejections Under 35 USC 103(a)

Claims 1-2, 7-12, and 17-20 are rejected under 35 USC 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA). Applicant respectfully traverses this rejection.

AAPA is fundamentally different from the method of Claim 1 and the corresponding circuit of Claim 11. In AAPA, one byte (e.g., 8 bits, as shown in Fig. 1) or one large byte (e.g., 32 bits, which can also be viewed as four smaller bytes of 8 bits, as shown in Fig. 3) is compared to a number of possible values all at the same time. For example, in the method illustrated in Fig. 3, 32 comparisons are performed simultaneously. ("[I]mplementing in an integrated circuit the method illustrated in Fig. 3 requires a large amount of circuitry, as 32 32-bit comparisons are being performed simultaneously." Paragraph 0025.) A single alignment is then performed based on the results of these 32 simultaneous comparisons.

As summarized in paragraph 0025 of the specification as filed, for example, "The present invention presents an alternative approach, in which a multi-level detection and alignment procedure is used to reduce the amount of logic required to implement the function."

In the method of Claim 1, the comma detection and alignment are performed as a sequential process. First, the location of the comma within a byte is determined ("comparing each N consecutive bits in the unaligned data stream with a

predetermined byte value having N bits, where N is an integer"), and the byte alignment is performed ("aligning, when a first set of N consecutive bits matches the predetermined byte value, the unaligned data stream based on a position of the predetermined byte value within the unaligned data stream to provide a partially aligned data stream"). Importantly, the next steps of comparison and alignment act on the already partially aligned data stream, and detect a sequence of bytes after the byte alignment has been performed ("comparing Q consecutive data bytes in the partially aligned data stream with a predetermined sequence of byte values, where Q is an integer; and aligning, when a first set of Q consecutive bytes matches the predetermined sequence of byte values, the partially aligned data stream based on a position of the first set of Q consecutive bytes within the partially aligned data stream to provide a fully aligned data stream"). This second series of steps, in turn, produces a "fully aligned data stream".

Thus, the first comparison and alignment produce a partially aligned data stream, as is clearly specified in the claim. Since the remaining steps act on the partially aligned data stream, it is clear from the claim language that the second comparison and alignment are performed after the first alignment is complete. The second comparison and alignment produce the fully aligned data stream.

AAPA does not show this "multi-level" approach to comma detection and alignment. Further, the Office Action appears to ignore this aspect of the claims in the rejection of Claims 1-2, 7-12, and 17-20. AAPA shows a single comparison and alignment, not a two-stage (or "multi-level") alignment, in which a partially aligned data stream is produced by a first comparison and alignment, then re-compared and re-aligned to produce the fully-aligned data stream.

Therefore, and for at least this reason, Claim 1 clearly distinguishes over AAPA. Claims 2 and 7-10 also distinguish over AAPA for at least the reasons of Claim 1, from which they depend.

Claim 11 is similar to Claim 1, and also distinguishes over AAPA for the reasons given above in regard to Claim 1. Claims 12 and 17-20 also distinguish over AAPA for at least the reasons of Claim 11, from which they depend.

Claims 3, 6, 13, and 16 are rejected under 35 USC 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Ambrose et al. (USPN 7,230,956, hereinafter Ambrose). Applicant respectfully traverses this rejection.

As described above, AAPA does not teach the multi-level approach to comma detection and alignment claimed in Claims 1 and 11. Ambrose fails to remedy this deficiency. The Office Action references col. 7, lines 31-35 of Ambrose, which recite:

> In Table 3, column T refers to time, column A refers to the first count value A1, column B refers to the second count value A2, and column C refers to the A1A2 detect signal. When both the first and the second threshold levels are reached, the A1A2 Detect signal becomes 1.

Applicant respectfully submits that this text from Ambrose neither teaches nor discloses Applicant's claimed multi-level approach to comma detection and alignment, without which the limitations of Claims 3, 6, 13, and 16 have no context and, therefore, no meaning.

Ambrose routes his N-bit bytes or words to multiple detect circuits 110 and performs simultaneous checks for a predetermined sequence of bits, as in AAPA. Ambrose then aligns the data stream in align slice blocks 115 based on the results from the detectors 110. (See Ambrose' Fig. 1.) Ambrose does not produce a partially aligned data stream by performing a first comparison and alignment, and then perform a second comparison and alignment on the partially aligned data stream to produce the fully aligned data stream, as claimed by Applicant. Ambrose performs only one alignment step, as shown in Fig.1. The single alignment step may be based on two count values, as noted in the quoted text above. Nevertheless, only a single alignment step is performed. Parenthetically, Ambrose' approach still requires many more simultaneous operations than Applicant's method, and therefore requires much more logic to implement. Thus, Ambrose' approach fails to provide the benefits of Applicant's invention and is not analogous thereto.

Ambrose neither teaches nor suggests generating, comparing, or aligning a partially aligned data stream. Therefore, Ambrose clearly neither teaches nor suggests Applicant's claimed steps of or means for:

> ... generating a second value identifying a position of the predetermined byte value within the partially aligned data stream, and wherein [the means for] comparing Q consecutive data bytes comprises [means for] utilizing the second value to identify a comparison to perform that includes the predetermined byte value (Claims 3, 13)

or

> ... aligning the partially aligned data stream comprises [means for] aligning the partially aligned data stream with a center point of the predetermined sequence of byte values. (Claims 6, 16).

Therefore, and for at least these reasons, Claims 3, 11, 13, and 16 are patentable over AAPA and Ambrose, taken singly or in combination.

Claims 4 and 14 are rejected under 35 USC 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Lecourtier et al. (USPN 6,560,275, hereinafter Lecourtier). Applicant respectfully traverses this rejection.

As described above, AAPA does not teach the multi-level approach to comma detection and alignment claimed in Claims 1 and 11. Lecourtier fails to remedy this deficiency. The Office Action references Figs. 11a and 11b as well as col. 11, lines 22-35, which recite:

> FIGS. 11a and 11b respectively illustrate two links synchronized on transmission, their start-of-frame recognition patterns A1 being aligned within the tolerances of FIG. 9.

Applicant respectfully submits that these figures and text from Lecourtier neither teach nor suggest Applicant's multi-level approach to comma detection and alignment as claimed in Claims 1 and 11. Therefore, the combination of AAPA and Lecourtier neither teaches nor suggests Applicant's multi-level approach as claimed in Claims 1 and 11. Claims 4 and 14 also distinguish over these references, taken singly or in combination, for at least the reasons of Claims 1 and 11, from which they depend.

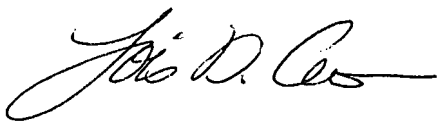
Claims 5 and 15 are rejected under 35 USC 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Lecourtier, and further in view of Ambrose. Applicant respectfully traverses this rejection.

As described above, AAPA does not teach the multi-level approach to comma detection and alignment claimed in Claims 1 and 11. Lecourtier and Ambrose both fail to remedy this deficiency, as is also described above. Therefore, Claims 1 and 11 are patentable over the combination of AAPA, Lecourtier, and Ambrose. Claims 5 and 15 are also patentable over these references, taken singly or in combination, for at least the reasons of Claims 1 and 11, from which they depend.

Conclusion

All claims should now be in condition for allowance and a Notice of Allowance is respectfully requested. If any action other than allowance is contemplated by the Examiner, the Examiner is respectfully requested to telephone Applicant's agent, Lois D. Cartier, at 720-652-3733.

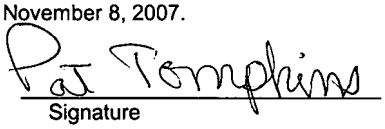
Respectfully submitted,



Lois D. Cartier
Agent for Applicant
Reg. No. 40,941

I hereby certify that this correspondence is being deposited with the United States Postal Service as **first class mail** in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450, on November 8, 2007.

Pat Tompkins
Name



Signature